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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,979	07/10/2001	Yoshimi Ishibashi	SAE-024	6945

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EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
1774	4

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,979

Applicant(s)

ISHIBASHI ET AL.

Examiner

Tamra L. Dicus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It does not make sense how a paper can have a thickness that is greater than diameter of a thread. Diameter (measures circumference) and thickness (planar measurement) are two very different dimensions and can not be compared to one another.

3. Regarding claims 1, 5, 6, 7, 9, 14, 20, 24-26, 28, and 33, the term "thread-shaped" and/or "ribbon-shaped" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "thread-shaped" and "ribbon-shaped"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.

4. Claim 14 and 33 seem to have a repetitive phrase. See "for forming an adhesive layer" in line 22 of claim 14 and lines 12-13 of claim 33. As written, both claims are not clear.

Claim Objections

5. Claim 5 is objected to because of the following informalities: Claim 5 states a thread has a diameter in micrometers. The Examiner suggests a change from micrometers to the most common measurement of thread in denier. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5, 10-13, 15-22, 24, and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,028,028 to Nitta.

Nitta teaches a recording paper comprising a paper support and a recording layer of either woven or nonwoven fabric formed on the paper layer, where the support has a security element embedded within, such as a thread/fiber (thread-shaped), where the recording layer has a thickness between 30 to 300 micrometers, the paper support has a thickness between 80 and 500 microns, and the synthetic threads are from 40 to 150 denier. See col. 2, lines 25-63, col. 3, line 35 and 61, col. 5, line 66, col. 7, lines 43-50, col. 8, line 31, and Table I.

Nitta further teaches an adhesive bonded to either side of the thread in the fabric woven sheet, and in the nonwoven sheet the adhesive adheres to the paper support at col. 2, lines 37-56.

Regarding claim 11, how the adhesive layer contacts the paper support, e.g. “by contact...and water when the element...is embedded...during paper making...heat applied...”, these involve process limitations which are given no patentable weight. Regardless, Nitta teaches the very method of dipping fibers of thermoplastic resin such as polyester, polypropylene, or a polyamide into water to produce the nonwoven fabric sheet at col. 4, line 34-40 by heating and pressing with rolls or a press. See further col. 5, lines 1-11 and col. 7, lines 10-25 where Nitta describes the suitable thermoplastic resinous fibers one can use, which include also polyurethane and ethylene-acrylic adhesives.

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At col. 11, line 22, Nitta teaches it is known to include fluorescent dyes in the coating layer over a recording layer that is thermosensitive. See further col. 11, lines 9-10 and col. 9, lines 22-25.

Regarding the electron accepting/donating compounds and binder inclusions of claim 15, Nitta teaches a thermosensitive layer that contains dyes, fatty acids and metal salts, inorganic or organic materials, waxes such as paraffin wax with binders such as starch, gum Arabic, ethylene/acrylic acid copolymer salts at col. 9, line 23-col. 10, line 56 and col. 11, line 4-27. The same components are used, therefore the electron accepting/donating properties of the compounds are inherent.

Regarding the film forming property of the binder of claim 16, it is well known that the thermoplastic polymers are film forming, see Figure 1 and the teachings of Nitta at col. 14, lines 10-12 which show polymeric binders are films, thereby having film forming ability.

Additionally, Nitta teaches the recording sheet useful as an ink-jet, laser printing, and thermal transfer image-receiving sheets at col. 1, lines 7-19.

Regarding claim 19, Nitta teaches an intermediate-coating layer which is in between the paper and recording layer, that comprises a vinyl chlorine-vinyl acetate copolymer, which is equivalent to hollow organic particles, or may comprise a pigment such as titania at col. 12, line 60 and col. 13, lines 57-58. See further Figure 1 and col. 13, line 13.

Regarding claim 20, Nitta teaches a paper support having between 20 and 300 microns at col. 7, line 43 and a thread diameter of 40 to 159 denier at col. 3, line 61.

The limitations of claims 1-3, 5, 10-13, 15-22, 24, and 29-32 have been met under 35 USC § 102.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4, 6-9, 14, 23, 25-28, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,028,028 to Nitta in view of USPN 6,199,911 to Isherwood et al. and further in view of USPN 6,139,065 to Washburn et al.

Nitta does not explicitly state the security element being a different color, or that metal is vapor deposited of claims 4, 6-9, 23, 25-28. Isherwood discloses a variety of security elements (see Figures) applied to a security document which may be metallized or colored. Isherwood discloses it is well known to color, coat, metallize, and vapor deposit metal such as Al or another metal onto security elements such as thread or strips (ribbon) made of synthetic film such as polyester at col. 1, lines 23-25, lines 48-50, col. 4, lines 1-15, lines 38-45 and col. 2, lines 40-55. Isherwood further teaches a thread or security element having a width of at least 0.5 mm, which falls in the range of 0.3mm to 20 mm as claimed in claim 9 and 28; the thickness of 10 to 80 microns is inherent since width multiplied by width equals thickness. Addressing the ratio of thickness of the paper to the security element of synthetic film and metal layers of claim 26, it would have been obvious to one of ordinary skill in the art to produce a thickness ratio of paper to coated security thread/element, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. The

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thickness of each (paper and security element) determines what the ratio will be. Thickness is optimizable - the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render Applicant's claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. Both references do not explicitly state the security element and paper are different colors. Regardless, Washburn teaches filaments may have different colors, widths, shapes or any combination of the same to further enhance security features of the security paper at col. 6, lines 50-54. Additionally, Nitta teaches in Example 3 paper being of various colors such as yellow or magenta. Hence it would have been obvious to one of ordinary skill in the art to modify the recording sheet of Nitta to include metallized and/or colored security element such as thread or ribbon embedded in a paper support for the purpose of

- (1) enhancing the visual effect as taught by Isherwood at col. 4, line 42,
- (2) to include different colored filaments of any size or shape in order to further enhance security features of the security paper as taught by Washburn at col. 6, lines 50-54, and
- (3) to optimize coloring of a sheet of paper, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272.

Nitta does not teach the adhesive layer preparation and application of claims 14 and 33. Regardless, "prepared by uniformly dispersing..., applying the resulting coating for forming...and drying..." process steps, are process limitations in product claims. Patentability resides in the product, the process notwithstanding. However, Washburn teaches the use of adhesive on security filaments such as synthetic thread, which may be fluorescent, in order to

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adhere to paper at col. 1, line 64-66. See further col. 5, line 65-col. 6, line 10, and lines 33-38.

Also Washburn teaches calendaring rolls may be used to apply pressure and heat to the filaments to laminate it to the paper at col. 2, lines 1-11. At col. 3, lines 42-50, Washburn discloses suitable adhesives may be used such as ultraviolet, water base, or pressure-sensitive adhesives, all of which are equivalent to in water or organic solvent mediums for forming adhesive.

Washburn does not state the application amount of 1 g/m^2 to 10 g/m^2 . However, it would have been obvious to one of ordinary skill in the art to produce a coating application amount of 1 g/m^2 to 10 g/m^2 , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. The amount of coating directly effects the thickness. Furthermore, Nitta teaches in Example 6 a water-based coating fluid applied in an amount of 5 g/m^2 and then dried, then supercalendered to obtain a thermosensitive recording sheet. The examiner has established a *prima facie* case of obviousness and has provided evidentiary support thereof for the rejection of claims 4, 6-9, 14, 23, 25-28, and 33 under 35 U.S.C. 103(a).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 5,697,649 to Dames et al. teaches security strips or threads coated with a layer of metal, such as Al, Ni, Ag, or magnetic iron oxide.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus
Examiner
Art Unit 1774

October 18, 2002

CYNTHIA H. KELLY
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